

***Theridion incanescens* Simon, 1890 and *Theridion jordanense*
Levy & Amitai, 1982 new to the fauna of Egypt
(Araneae: Theridiidae)**

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Abstract

Theridion incanescens Simon, 1890 and *T. jordanense* Levy & Amitai, 1982 are succinctly described and recorded for the first time from Egypt. The male of *T. jordanense* is introduced for the first time. As taxonomic novelty the synonymy of *Theridion egyptium* Fawzy & El Erksousy, 2002 with *T. jordanense* is proposed.

Keywords: Spiders, Theridiidae, *Theridion*, synonymy, Egypt.

Introduction

The genus *Theridion* Walckenaer, 1805 is the most comprehensive within the family Theridiidae, including almost 600 of the about 2300 total species (Platnick, 2012). As type genus it represents a conglomeration of well and poorly known species and species which have been placed herein owing to a lack of better understanding.

In the present taxonomic-faunistic note two species are introduced, which are clear members of the genus *Theridion*. They are both scarcely known and are now succinctly described from both genders and reported as new to the fauna of Egypt. *Theridion incanescens* is illustrated for the first time since its original description by Simon (1890) from Yemen, although a depiction of its mating behaviour already exists (Knoflach, 2004). *Theridion jordanense* has so far been known from the female only (Levy & Amitai, 1982; Levy, 1998). A short description of the hitherto unknown male is given. For both species a full and more detailed description is in preparation in the course of an investigation of the family Theridiidae of the Arabian Peninsula (Thaler-Knoflach & van Harten, in prep.).

The first record of Theridiidae from Egypt was that of Cambridge (1876) who described *Theridion melanostictum* from Alexandria, *T. spinitarse* from Cairo, and recorded *T. varians* Hahn, 1833 from Alexandria. The two other *Theridion* species reported from Egypt (El-Hennawy, 2006), *T. nigrovariegatum* Simon, 1873 and *T. musivum* Simon, 1873 have recently been transferred to *Heterotheridion* and *Ruborridion* by Wunderlich (2008, 2011). Finally, Wunderlich (2011) also added *T. cairoense* as a new species from Cairo.

A new synonymy is proposed concerning *Theridion egyptium*, a species which was described ten years ago by Fawzy & El Erksousy (2002) from Cairo and which was already regarded as ambiguous (El-Hennawy, 2004). In the following it is synonymised with *T. jordanense*.

Material and Methods

Specimens were examined using a Leica Wild M8 stereoscopic microscope with a micrometer eyepiece. Male and female genitalia were dissected and studied as temporary mounts by submerging them in glycerine, clove oil and Hoyer's compound solution on half-covered slides under a Wild M20 microscope with a drawing tube. Living spiders were photographed with a Nikon F3, Medical-Nikkor 120 mm lens, ring flash and a teleconverter.

Abbreviations: C – conductor, E – embolus, S – subtegulum, T – tegulum, MA – median apophysis, TTA – theridiid tegular apophysis (nomenclature of male palp sensu Agnarsson, 2004 and Agnarsson *et al.*, 2007).

Depository and museum abbreviations: ACE – Arachnid Collection of Egypt Hisham El-Hennawy, CTB – Collection Theo Blick [private collection], CTh – Collection Thaler and Knoflach [private collection], MHNP – Muséum d'Histoire naturelle Paris.

Theridion incanescens Simon, 1890 (Figs. 1-9)

Theridion incanescens Simon, 1890: 97, males and females, type locality Aden, Shaykh 'Uthman ("Cheikh Othman"), Yemen.

Material examined: 2♀ (1♀ deposited in ACE, 1♀ MHNP), Egypt: Western Omraniya, Giza 29°59'44"N, 31°11'50"E, elev. 26 m, collected by Naglaa Ahmad on 22.05.2006 from Mottled Spurge *Euphorbia lactea* and succulent *Aloe vera* cultivated in a house's roof garden.

Type material: 3♂ 1♀ (AR 2329, MHNP), Yemen, Aden, E. Simon.

Comparative material: Numerous ♂♀ from Yemen collected by Antonius van Harten from various places (see Figs. 1-5; Thaler-Knoflach & van Harten, in prep.).

Description: Simon (1890).

Measurements. Typical medium-sized *Theridion* species. Male types (n=2): Total length 2.1-2.4, carapace length 0.9-1.0, width 0.7-0.8, length femur I 1.3-1.6, tibia I 1.0-1.4 mm. Female type: Total length 2.5, carapace length 1.0, width 0.8, length femur I 1.4, tibia I 1.0 mm.

Female from Egypt: Total length 3.4, carapace length 1.1, width 1.0, length femur I 1.4, tibia I 1.1 mm.

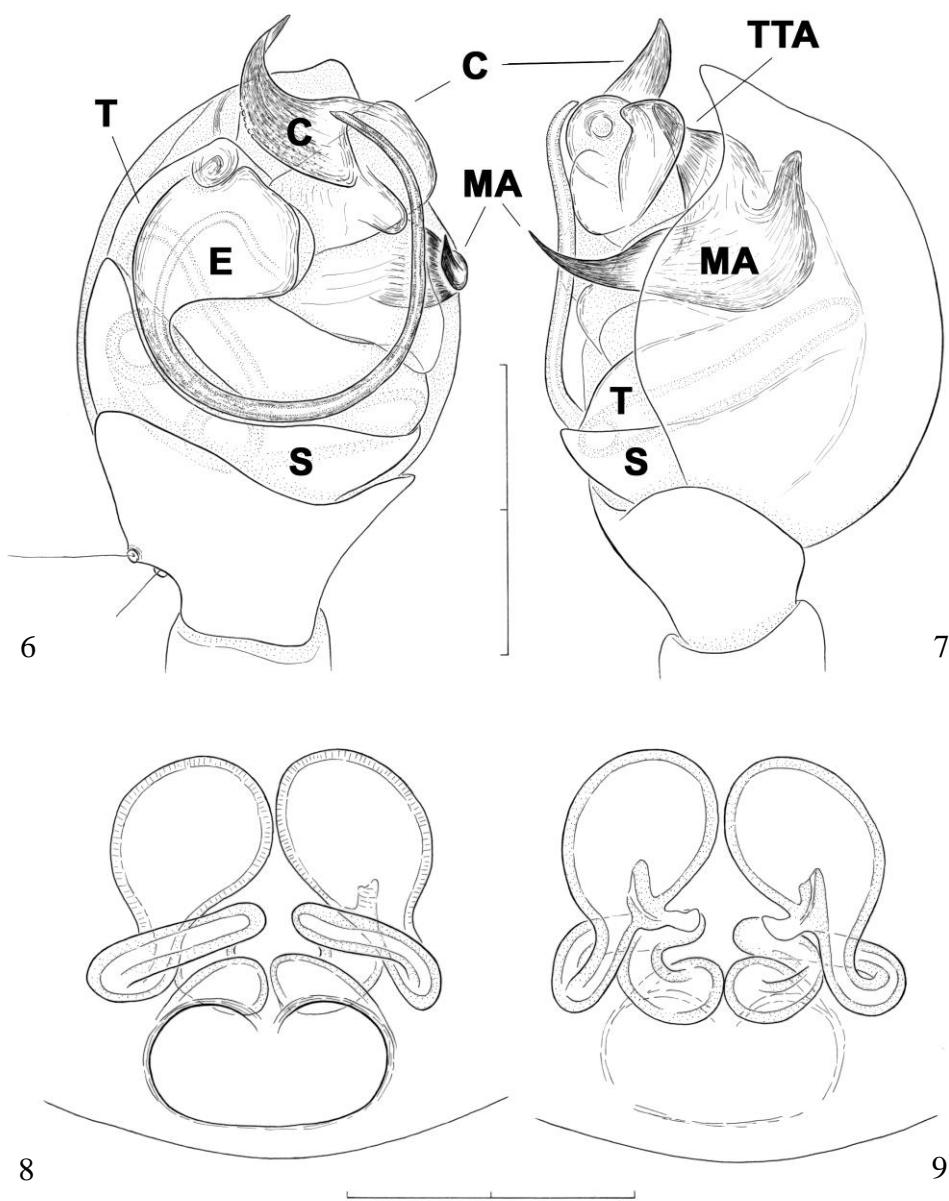


Figs. 1-4. *Theridion incanescens* Simon, 1890. Female (1-2) and male (3-4) from Yemen, in dorsal (1, 3), ventral (2) and lateral view (4).



Fig. 5. *Theridion incanescens* Simon, 1890. Female and male from Yemen, copulation in final phase. Note protruding mating plug secretion.

Somatic features, colouration (Figs. 1-5): Colouration quite variable, with light yellowish-brown, reddish or sometimes also dark brown ground colour. Common form: Carapace light yellowish-brown, sometimes with indistinct fuliginous shading at sides but without clear marking. Sternum dark brown. Legs yellowish-brown, with a few dark annulations on distal femora, tibiae and metatarsi, especially on leg IV. Abdomen light brown, with characteristic creamy whitish folium. This evenly undulated longitudinal median band is encircled by dark pigmentation of variable extent. Male epigastric region bulging and dark (Fig. 5), seminal vesicle (part of male genital system) dark and sometimes translucent. Venter uniformly light brown. Spinnerets surrounded by a dark ring of pigmentation. A few specimens very dark, their legs with extended dark markings.



Figs. 6-9. *Theridion incanescens* Simon, 1890, types from Yemen. Male palp, ventral (6) and retrolateral view (7). Epigynum/vulva, ventral (8), dorsal view (9). Figs. 6-9 drawn at same scale. Scale lines: 0.2 mm.

Male palp (Figs. 6-7): Conformation of male palp agrees with other representatives of the *Theridion varians* group (see Knoflach, 1998). Tibia short, with two retrolateral trichobothria. Conductor markedly pointed and curved, its distal part forming a distinct sickle which is covered with minute scales and protrudes beyond cymbium. Prolateral part of median apophysis sharply pointed, sickle-shaped. Theridiid tegular apophysis tapering, rather small and hidden by conductor. Basal part of embolus on retrolateral side of tegulum. Embolus at base with typical knob-like condylar articulation at retrolateral tegulum. Distal part of embolus slender, 0.39 mm long. Subtegulum with guiding furrow for embolus.

Epigynum/vulva (Figs. 8-9): Epigynal cavity large, transverse and rounded (see also Fig. 2), its lateral and anterior border sclerotised, where copulatory orifices start. Copulatory ducts about as long as distal embolus, ca. 0.39 mm. They turn inwards, forming a small coil, and then diverge laterally before entering the receptacula posteriorly. In mated females the epigynal cavity is obviously filled by plug secretions (Fig. 5).

Generic placement: Simon (1890) already indicated the close affinity to *Theridion pictum*, type species of *Theridion* and typical representative of the *T. varians* group. This can be confirmed also from genital characters, from the protruding male epigastric region, and elements of the copulatory behaviour, especially formation of a mating plug, see below.

Distribution: The species is presently known only from Yemen and Egypt.

Behaviour: Copulation follows the pattern of *Theridion varians*, with numerous sperm inductions being part of copulation, with an initial pseudocopulation and a long concluding phase of mating plug production (see Knoflach, 1998, 2004). A male interrupted copulation four times for construction of sperm web and sperm induction. Copulation consisted of five sequences. The short first copulatory sequence is assumed to be a preinsemination phase without sperm transfer. In the course of the last sequence the conspicuous mating plug secretion is produced, which completely fills and seals the epigynal cavity (Fig. 5).

***Theridion jordanense* Levy & Amitai, 1982**
(Figs. 10-13)

T. jordanensis Levy & Amitai, 1982: 103, figs. 41-42, female, type locality Nahal Samak, northern Sea of Galilee, Israel.

T. jordanense; Levy, 1998: 196, figs. 373-374, female.

Theridion egyptium Fawzy & El Erksousy, 2002: 832, figs. 1-4, male, female, type locality Giza, Cairo, Egypt. **Nov. syn.**

Material examined: 5♂ 5♀ (3♂ 3♀ deposited in ACE, 1♂ 1♀ CTh, 1♂ 1♀ MHNP), Egypt: Cairo University, Giza 30°01'05"N, 31°12'31"E, elev. 23 m, collected by Naglaa Ahmad on 22.02.2004 from olive trees, cultivated behind faculty of Agriculture.

Comparative material: 2♂ (CTB), Syria: Hammaralkasra upon Euphrat at border to Iraq, 3.8.1989, collected by Ismail Al Hussein, dedit Theo Blick.

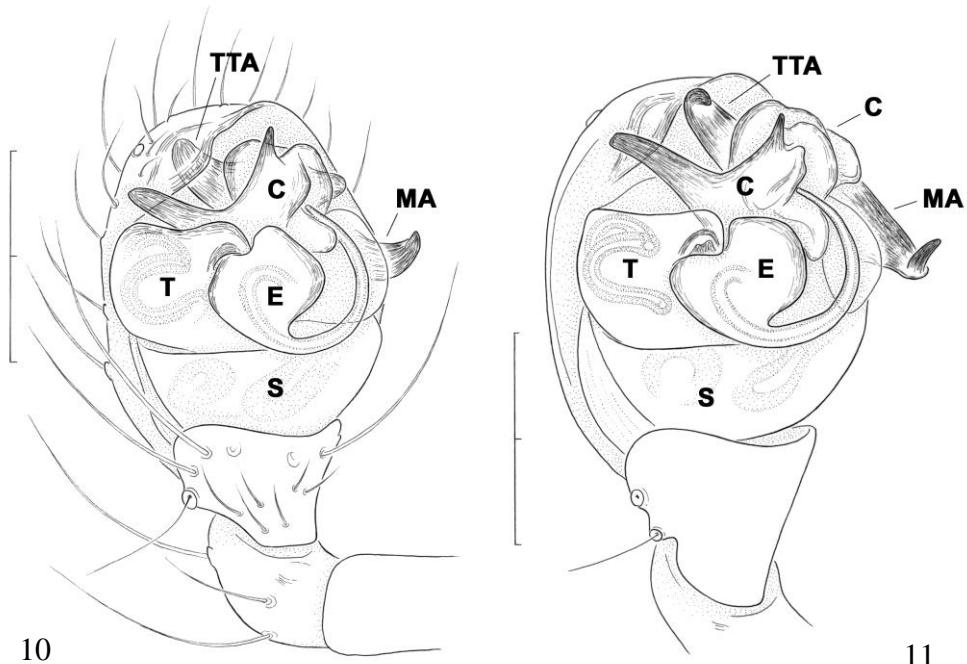
Numerous ♂♀ from United Arab Emirates collected by Antonius van Harten from several places (Thaler-Knoflach & van Harten, in prep.).

Description, identification: Levy & Amitai (1982), Levy (1998), females only.

Synonymy: *Theridion egyptium* Fawzy & El Erksousy, 2002 is synonymised with *T. jordanense* from the literature (figs. 1-4 in Fawzy & El Erksousy, 2002) because of the following distinct characters: Conformation of male palp and epigynum very similar (Figs. 10-13). Shape of conductor, median apophysis and theridiid tegular apophysis fully corresponds, albeit labelling of palpal structures in Fawzy & El Erksousy (2002) deviates from standard labelling. Figures of the internal female copulatory organ of *Theridion egyptium* largely resemble those of *T. jordanense* in the coiled course of the copulatory ducts and separate copulatory orifices (Figs. 12-13). Also colour pattern is in conformance, see median dark patch between spinnerets and epigastric furrow (fig. 3 Fawzy & El Erksousy, 2002; labelled as cribellum !) and carapace markings. The present specimens examined from the type locality Giza strengthen this synonymy.

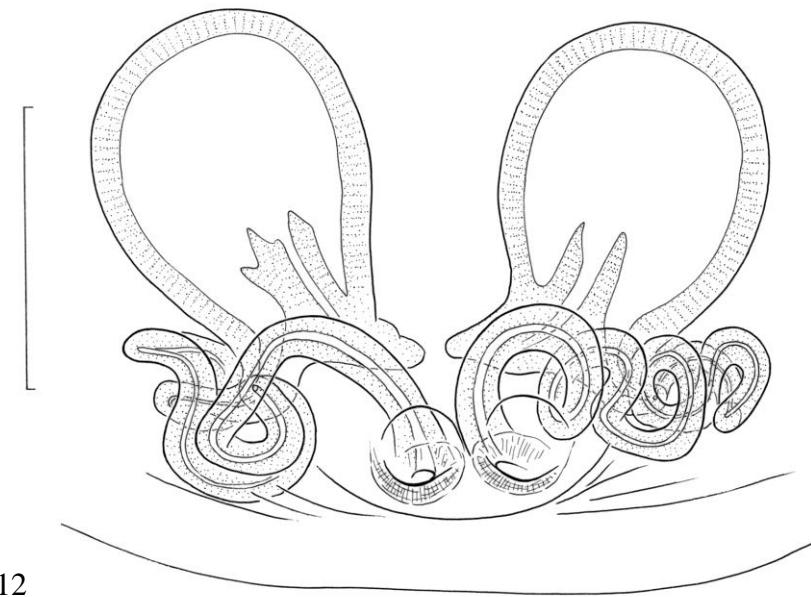
Measurements. Medium-sized *Theridion* species, males rather long-legged. Males from Egypt (n=2): Total length 2.4-2.6, carapace length 1.0, width 0.8-0.9, length femur I 2.2-2.3, tibia I 1.9-2.1 mm. Females from Egypt (n=2): Total length 2.6-2.9, carapace length 0.8, width 0.7-0.8, length femur I 1.6-1.7, tibia I 1.3-1.5 mm.

Somatic features, colouration: Overall light coloured, legs long and slender. Carapace yellowish, with narrow dark margins and dark median band. Sternum yellowish, sometimes with dark margins. Legs either uniformly light yellowish or with tiny dark speckles. Abdomen dorsal creamy white, with indistinct creamy white folium. On venter a median dark patch between spinnerets and epigastric furrow. Male epigastric region protruding and sometimes darkened. A few specimens very dark, showing numerous dark spots and extended dark markings on legs and abdomen.

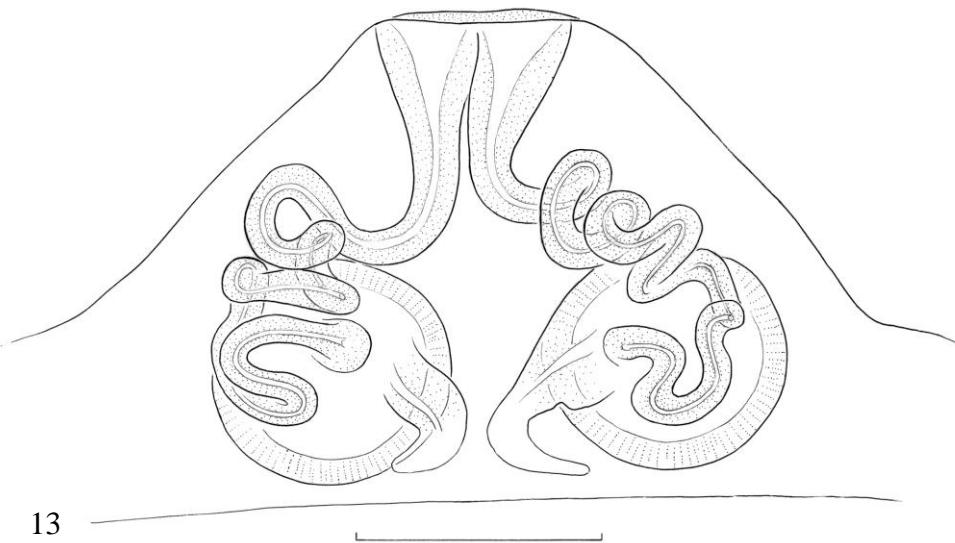


Figs. 10-11. *Theridion jordanense* Levy & Amitai, 1982, from United Arab Emirates (10) and Syria (11). Male palp, ventral view (10-11). Scale lines: 0.2 mm.

Male palp (Figs. 10-11): Tibia with one or two retrolateral trichobothria. Conductor a complex, sclerotised structure with numerous lobes and two prominent finger-like outgrowths, one larger one directed retrolaterally and one smaller one directed to apex of cymbium. Median apophysis forming a conspicuous tip at prolateral side. Theridiid tegular apophysis finger-like, arresting towards cymbial hood. Basal part of embolus in centre of bulbus and tegulum. Distal embolus rather short, 0.20-0.21 mm long, not correlating with the length of the female's copulatory duct. Embolar base with knob-like locking device.



12



13

Figs. 12-13. *Theridion jordanense* Levy & Amitai, 1982, from United Arab Emirates. Epigynum/vulva, ventral (12), and aboral view (13). Scale lines: 0.1 mm.

Epigynum/vulva (Figs. 12-13). Epigynal area raised and distinctly projecting, in side view conical. Copulatory orifices situated on top of projection, small and clearly separate.

Their posterior edges heavily sclerotised. Copulatory ducts form numerous small coils, their length about 0.4 mm. The lumina of these ducts are rather narrow and do not appear to match the size of the males' emboli and thus do not allow penetration at full length.

Distribution: *Theridion jordanense* was hitherto known from two regions in Israel (Dead Sea and Lake Kinneret, see Levy, 1998) and is now recorded from Syria and Egypt.

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